

WHAT IS CLAIMED IS:

1. A system for compressing a pronunciation guide which includes a plurality of guide entries, each entry having a guide word and at least one associated phoneme representing the pronunciation of the word, the system comprising:

memory storing

(1) a correspondence table which includes a plurality of correspondence sets, each set having

(i) a text entry,

(ii) a phoneme entry representing a pronunciation of the text entry, and

(iii) a symbol identifying the correspondence set;

and

(2) a matching system for comparing a selected guide word and the associated phonemes with correspondence sets, and storing correspondence symbols which represent matching correspondence sets as a compressed pronunciation guide entry in the memory; and

a processing unit coupled to the memory for controlling the operations of the matching system.

2. The system of claim 1, wherein the correspondence table includes correspondence sets for productive combinations of phonemes and text in a particular language.

1 3. The system of claim 1 wherein the correspondence symbols are
2 numbers, each representing the position of the respective
3 correspondence set in the correspondence table.

1 4. The system of claim 1 wherein the memory further stores a
2 tuning function which enables deletion of unproductive
3 correspondence sets from the correspondence table.

1 5. The system of claim 1 wherein the matching system
2 compares various correspondence sets, and if several matches
3 are made selects the best match.

1 6. The system of claim 1 wherein the matching system generates
2 a special symbol representing a silent character, and stores the
3 special symbol as part of a compressed pronunciation guide entry in
4 the memory.

1 7. The system of claim 1 wherein the matching system generates
2 a special symbol representing a phoneme without any corresponding
3 characters, and stores the special symbol as part of a compressed
4 pronunciation guide entry in the memory.

1 8. The system of claim 1 wherein the matching system generates
2 a decoder table comprising decoder code sets for use in subsequently
3 de-compressing compressed pronunciation guide entries.

1 9. The system of claim 8 wherein the decoder code sets replicate
2 a portion of the correspondence table.

1 10. The system of claim 8 wherein the decoder code sets include
2 symbols representing silent text.

1 11. The system of claim 8 wherein the decoder code sets include
2 symbols representing phonemes without corresponding characters.

1 12. The system of claim 1 wherein the matching system selects
2 correspondence sets from the correspondence table for comparison
3 with characters and phonemes from the guide entry.

1 13. The system of claim 1 wherein the pronunciation guide
2 includes a pronunciation dictionary.

1 14. A system for using a compressed pronunciation guide and
2 decoder table to decode selected text, comprising:
3 memory storing

4 (1) a compressed pronunciation guide having a
5 plurality of symbol sets, each symbol set representing a guide
6 word and at least one corresponding guide phoneme
7 representing the pronunciation of the guide word,

8 (2) a decoder table having a plurality of decoder code
9 sets for translating symbol sets, each decoder code set
10 including a decoder text entry, a decoder phoneme entry and a
11 decoder symbol representing the decoder code set;

12 (3) a decoder system for using the decoder table to
13 translate symbol sets to find a guide word which matches the
14 selected text, and upon finding a match using the decoder table

15 to retrieve the decoder phonemes from the matching symbol
16 set; and
17 a processor coupled to the memory for controlling the
18 operations of the decoder system.

1 15. The system of claim 14 wherein the decoder code sets include
2 symbols representing silent text.

1 16. The system of claim 14 wherein the decoder code sets include
2 symbols representing phonemes without corresponding characters.

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1 17. A computer-based method for compressing a pronunciation
2 guide which includes a plurality of guide entries, each entry having a
3 guide word and at least one associated guide phoneme representing
4 the pronunciation of the guide word, comprising the steps of:
5 providing a computer memory;
6 storing in a first portion of the computer memory a
7 correspondence table which includes a plurality of correspondence
8 sets, each correspondence set including a correspondence text entry,
9 a correspondence phoneme entry representing a pronunciation of the
10 correspondence text entry and a unique correspondence symbol
11 identifying the correspondence set;
12 receiving a guide word and at least one guide phoneme
13 representing the pronunciation of the guide word;
14 comparing the guide word and guide phonemes with
15 correspondence sets; and

16 storing the correspondence symbols representing matching
17 correspondence sets as compressed pronunciation guide entries in a
18 second portion of the computer memory.

1 18. The method of claim 17 wherein the correspondence table
2 includes correspondence sets for productive combinations of
3 phonemes and text in a particular language.

1 19. The method of claim 17 wherein the correspondence symbol is
2 a number representing the position of the correspondence set in the
3 correspondence table.

1 20. The method of claim 17 further comprising, after the step of
2 storing in a first portion and before the step of receiving, the step of
3 deleting unproductive correspondence sets from the correspondence
4 table.

1 21. The method of claim 17 wherein the step of comparing further
2 comprises:

3 selecting a next currently-unmatched guide phoneme from the
4 guide entry;

5 retrieving all correspondence sets from the correspondence
6 table which begin with the selected guide phoneme; and

7 comparing the retrieved correspondence sets with the
8 remaining portions of the guide entry.

1 22. The method of claim 21 wherein the step of comparing
2 further comprises examining several correspondence sets, and
3 if multiple matches are made selecting the best match.

1 23. The method of claim 22 wherein the step of comparing further
2 comprises, if a match is not made, generating a special symbol which
3 represents a silent guide character, and storing the special symbol in
4 the memory as part of a compressed pronunciation guide entry.

1 24. The method of claim 22 wherein the step of comparing further
2 comprises, if a match is not made, generating a special symbol which
3 represents a phoneme without any corresponding guide characters,
4 and storing the special symbol in the memory as part of a
5 compressed pronunciation guide entry.

1 25. The method of claim 17 and further comprising the step of
2 generating a decoder table including decoder code sets for de-
3 compressing the compressed pronunciation guide entries.

1 26. The method of claim 25 wherein the decoder code sets
2 replicate a portion of the correspondence table.

1 27. The method of claim 25 wherein the decoder code sets include
2 symbols representing silent text.

1 28. The method of claim 25 wherein the decoder code sets include
2 symbols representing phonemes without corresponding guide
3 characters.

1 29. The method of claim 17 further comprising, after the step of
2 storing in a second portion, the step of using the compressed
3 pronunciation guide to generate phonemes representing the selected
4 text.

1 30. A computer-based method for using a compressed
2 pronunciation guide and a decoder table to retrieve phonemes for
3 selected text, comprising the steps of:

4 providing computer memory;
5 storing in a first portion of the computer memory a compressed
6 pronunciation guide which includes a plurality of symbol sets, each
7 symbol set representing a guide word and at least one guide
8 phoneme representing the pronunciation of the guide word;

9 storing in a second portion of the computer memory a decoder
10 table which includes a plurality of decoder sets, each decoder set
11 having a decoder text entry, a decoder phoneme entry representing
12 the pronunciation of the decoder text entry, and a unique decoder set
13 identifying symbol;

14 receiving selected text;

15 using the decoder table to decode a symbol set in the
16 pronunciation guide to produce a guide word;

17 comparing the selected text with the guide word to determine
18 if they match; and

19 if a match is made, using the decoder table to retrieve the
20 guide phonemes corresponding to a matching symbol set.

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1 31. A computer storage medium storing a computer program for
2 causing a computer to perform the steps of:
3 allocating computer memory;
4 storing in a first portion of the computer memory a compressed
5 pronunciation guide which includes a plurality of symbol sets, each
6 symbol set representing a guide word and guide phonemes
7 representing the pronunciation of the guide word;
8 storing in a second portion of the computer memory a decoder
9 table which includes a plurality of decoder sets, each decoder set
10 having a decoder text entry, a decoder phoneme entry representing
11 the pronunciation of the decoder text entry, and a unique decoder set
12 identifying symbol;
13 receiving selected text;
14 using the decoder table to decode a symbol set in the
15 pronunciation guide to produce a guide word;
16 comparing the selected text with the guide word to determine
17 if they match; and
18 if a match is made, using the decoder table to retrieve the
19 guide phonemes corresponding to a matching symbol set.

1 32. A computer storage medium storing a computer program for
2 causing a computer to perform the steps of:
3 allocating computer memory;
4 storing in a first portion of the computer memory a
5 correspondence table which includes a plurality of correspondence
6 sets, each correspondence set including a correspondence text entry,
7 a correspondence phoneme entry representing the pronunciation of

8 the correspondence text entry and a unique correspondence symbol
9 identifying each correspondence set;

10 receiving a guide word and at least one guide phoneme
11 representing the pronunciation of the guide word;

12 comparing the guide word and guide phonemes with
13 correspondence sets; and

14 storing the correspondence symbols representing matching
15 correspondence sets as compressed pronunciation guide entries, in a
16 second portion of the computer memory.

1 33. A computer-based system for compressing a pronunciation
2 guide, which includes a guide word and at least one guide phoneme
3 representing the pronunciation of the guide word, comprising:

4 computer memory;

5 means for storing in a first portion of the computer memory a
6 correspondence table which includes a plurality of correspondence
7 sets, each correspondence set including a correspondence text entry,
8 a correspondence phoneme entry representing the pronunciation of
9 the correspondence text entry, and a unique correspondence symbol
10 identifying the correspondence set;

11 means for receiving a guide word and at least one guide
12 phoneme representing the pronunciation of the guide word;

13 means for comparing the guide word and guide phonemes with
14 correspondence sets; and

15 means for storing the correspondence symbols representing
16 matching correspondence sets as a compressed pronunciation guide
17 entry in a second portion of the computer memory.

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- 1 34. A computer data storage medium storing a correspondence
2 table which enables compression of a pronunciation dictionary, the
3 correspondence table comprising a plurality of correspondence sets,
4 each correspondence set including a correspondence text entry and a
5 correspondence phoneme entry representing the pronunciation of
6 the correspondence text entry, and a correspondence symbol
7 identifying the correspondence set.
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